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ABSTRACT

This is volume 1 of the series of translations of books from the Soviet literature on research in the psychology of mathematics instruction and on teaching methods influenced by the research. An introduction on Soviet education and mathematics education is provided. The purposes of this volume are to show how instructional media should be constructed for mathematics lessons, and how to use media in lessons. The first chapter addresses two topics: a development of didactic and biotechnological aspects of instructional media and the application of instructional media in classrooms. Chapter 2 considers the necessary activities, both mental and material, for establishing whether an object, situation, or set of conditions is sufficient for inclusion in a given concept. Chapter 3 includes an extensive mathematical description of volume and a detailed exposition of the ideas required to understand the concept of a rectangular parallelepiped and its volume in grade 4. Chapter 4 consists of descriptions of the instructional units for concepts and use of films, filmstrips, slides, workbooks, and other instructional media. The final chapter provides sample lesson plans. (YP)

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